

# CS 111 - Week 2 Lab Exercise - 2016-09-02

## Deadline

Due by the end of lab today. (Submit whatever you have by the end of lab, even if incomplete.)

## How to submit

Submit your Definitions window (`.rkt` file) for this lab using `~st10/111submit` on nrs-labs, with a homework number of 82.

## Purpose

To practice designing and writing a function.

## Important notes

- You are required to work in **pairs** on this lab exercise (unless there are special circumstances, such as an odd number of students in lab, in which case a trio may be approved... 8-)).
  - Remember, in pair programming both people work at one computer: one types ("drives"), while the other tells him/her what to type ("navigates").
  - You may switch roles while working on this lab exercise if you would like -- but I will be trying to see if people are really pair-programming.
  - If you are not pair-programming, then you may not receive full credit for your lab exercise.
- If you have a question during lab, and I am helping another pair, add one or both of your names to the "Next:" list on the board, and I will get to you as soon as I can.
- NOTE: some of your responses *might* be posted to the course Moodle site.

## Your tasks:

- Begin a *new* DrRacket **Definitions** window, and type in **comments** containing your names and today's date. Save this in a file with the name `111lab2.rkt`
- Put in the expressions to add the `image` and `universe` teachpacks:

```
(require 2htdp/image)
(require 2htdp/universe)
```
- decide on a function from the `2htdp/image` teachpack that produces a value of type `image` - I'm calling this your "chosen image type"
- THEN decide on a function that you would like to write, that expects a `number` expression, and it produces a VERSION of your "chosen image type" based on that number;
  - (maybe it expects a number, and gives you a circle with that radius;
  - maybe it expects a number, and gives you a rectangle with that width;

- maybe it expects a number, and gives you a text image whose color has that number as its red and/or green and/or blue values;  
[fun fact: `make-color` is a function that expects red, green, and blue values in `[0, 255]`, and returns a color you can use in any image operation expecting a color]
- you get to pick.)
- in a comment, write the SIGNATURE for the function you want to write
- in a comment, write the PURPOSE STATEMENT for the function you want to write
- write out the HEADER for the function you are writing, but put ... as its body right now
- write at least TWO different `check-expect` expressions for two example expressions using your function
- replace the ... in your function's body with the expression that your function can use to produce its desired result
- write at least one expression just calling your function
- click the Run button -- does your function work? If not, debug it until it does.
- When you are happy with the above (OR at the end of lab), save your Definitions window to the U: drive, use `ssh` to connect to `nrs-labs`, and use `~st10/111submit` with a homework number of **82** to submit your completed lab exercise.
  - Make sure you BOTH have a copy, also!
  - (BUT if necessary, e-mail me asking for a copy, BEING SURE to include the name of the person who worked with you!)